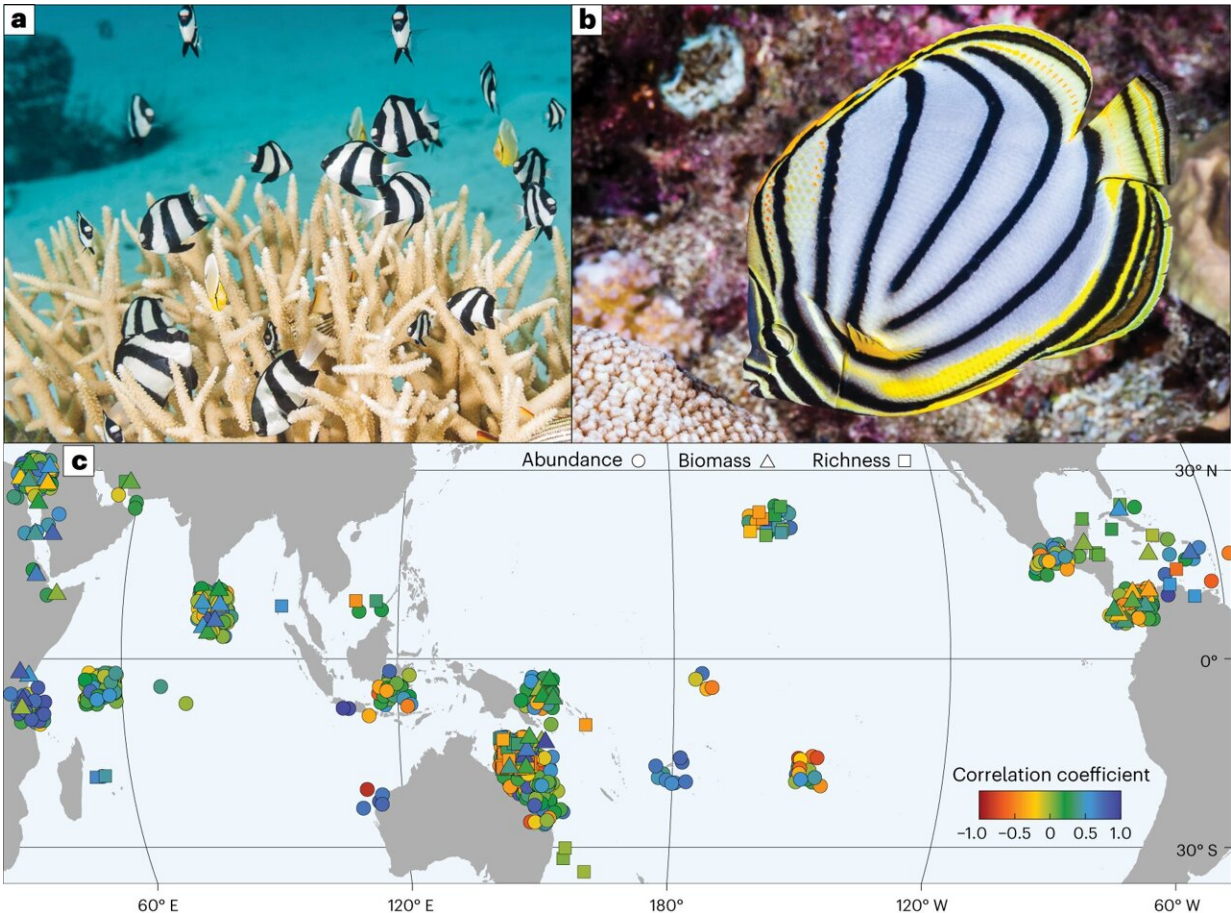


More coral may not equal more fish on reefs

February 19 2024



Coral use among fishes and the correlation coefficients (r) between fish metrics (abundance, biomass and species richness) and the percentage of coral cover. a, Coral-associated damselfish (*Dascyllus aruanus*) shelter within branching hard coral. b, An obligate coral-feeding butterflyfish (*Chaetodon meyeri*) preying on coral polyps. c, Location for each correlation coefficient (r) ($n = 723$), mapped using an Eckert IV projection. Panels a and b reproduced with permission from François Libert. Credit: *Nature Ecology & Evolution* (2024). DOI: 10.1038/s41559-024-02334-7

A team of international and North Queensland researchers from James Cook University have found the link between fishes and corals may not be as strong as scientists had always assumed. [The study](#) is published in *Nature Ecology & Evolution*.

Lead author, JCU Ph.D. candidate Pooventhran Muruga, examined more than 4,600 reports on the relationship between fishes and corals.

"Undeniably, [coral reefs](#) serve as a key habitat for reef fishes, providing both shelter and food. It is therefore no surprise that for more than four decades there has been a widespread consensus that [reef fishes](#) are associated with reef-building corals," Muruga said.

"But on closer inspection of the literature, we found a large variability within and across fishes and locations and globally there were only weak associations between fishes and corals."

Co-author, Professor David Bellwood said the findings questioned [assumptions](#) regarding the strength and ubiquity of fish-coral associations.

"I would caution against assuming a direct and omnipresent relationship between the two," Professor Bellwood said.

Co-author Dr. Alexandre Siqueira noted the apparent weakness of fish-coral associations, combined with the stability of some fish populations amidst catastrophic coral loss, underscored the need to acknowledge that coral cover alone may not influence fishes as strongly as we thought.

Muruga said rather than a critical interdependence, fishes and corals may be two co-occurring entities within a much more complex ecosystem.

"The findings don't downplay the importance of corals on reef but suggest there is more to the [relationship](#)," Muruga said.

"It emphasizes the need to look beyond the simple paradigm of more coral equals more fish and acknowledge the complex processes that structure and maintain coral reef communities," Murga said.

More information: Pooventhran Muruga et al, Meta-analysis reveals weak associations between reef fishes and corals, *Nature Ecology & Evolution* (2024). [DOI: 10.1038/s41559-024-02334-7](https://doi.org/10.1038/s41559-024-02334-7)

Provided by James Cook University

Citation: More coral may not equal more fish on reefs (2024, February 19) retrieved 30 April 2024 from <https://phys.org/news/2024-02-coral-equal-fish-reefs.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.